



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/576,731	05/23/2000	William Dean Bauman	DP-300043	4741

7590 04/04/2002

Delphi Technologies Inc.
Legal Staff
P O Box 5052
Mail Code 480 414 420
Troy, MI 48007-5052

EXAMINER

COMPTON, ERIC B

ART UNIT PAPER NUMBER

3726

DATE MAILED: 04/04/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
09/576,731

Applicant
Bauman et al

Examiner
Eric Compton

Art Unit
3726



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Feb 22, 2002
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 35 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirements.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☒ The proposed drawing correction filed on Feb 22, 2002 is: a) ☒ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- *See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 18) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other: _____

Art Unit: 3726

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicants'

Admitted Prior Art (AAPA) in view of US Patent 4,593,444 to Kavthekar.

AAPA, as found on pages 1-6 of the specification, discloses a prior art process for forming a metal roller bearing comprising forming a steel blank by either warm forging, hot forging, cold forging, and machining. As shown in Figure 1, the specific bearing surfaces of the blank are formed by various grinding processes.

However, AAPA do not disclose hard turning to form the inner and outer bearing surfaces.

Kavthekar discloses a method of forming a bearing comprising:

obtaining a metal blank (108) having end face surfaces, a lateral surface defining an outer diameter, and a centered circular bore, said bore having an inner surface defining an inner diameter;

Art Unit: 3726

hard turning the inner surface of the bore having a specified inner diameter, thereby forming an inner bearing surface (see Figures 17 & 18, col 8, lines 38-69); and

hard turning the lateral surface of the blank to a specified outer diameter, thereby forming an outer bearing surface concentric with the inner bearing surface (see Figures 15 & 16, col 8, lines 23-37).

Note: the fact that Kavthekar discloses additional grinding after the hard turning does not detract from initial teachings with respect to the hard turning to produce the inner and outer bearing surfaces to specific diameter. Also note that Kavthekar, like Applicant, does not require the step of grinding the blank end faces of the blank as found in AAPA.

Regarding claim 1, it would have been obvious to one of ordinary skill in the art, at the time of invention, to have formed the cylindrical (metal roller) bearing of AAPA by hard turning the inner and outer bearing surfaces, in light of the teachings of Kavthekar, in order to execute machining performed on common machines without removing the workpieces held in common workheads (col 2-3, lines 64-10).

Regarding claim 2, Figure 16 of Kavthekar shows the radial crown being formed.

Regarding claim 3, AAPA discloses providing a steel blank formed by either forging or machining.

Regarding claim 4, AAPA notes that heat treating of the blank prior to finishing is known (see page 8, lines 11-15). Kavthekar also notes heat treatment of the workpiece (col 9, lines 1-7).

Art Unit: 3726

Regarding claims 5-6, AAPA disclosed that it is known to forge the blank. Therefore, a flash piece is formed that must be subsequently removed. The prior art teaches grinding finish the inner surface of the bore. This operation inherently will remove the flash. Kavthekar teaches turning the inner surface of the bore rather than grinding. Therefore, turning the inner surface of the bore as taught by Kavthekar will remove the flash just as the prior art grinding operation did.

Regarding claim 7, Official Notice is taken that diamond honing machinery is known in the art.

Regarding claim 8, AAPA notes that forming an incised cross-hatched pattern on the inner surface of the bore is known (see page 2, lines 18-20).

Regarding claim 9, Official Notice is taken that the use of computer numerically controlled (CNC) lathes is well known in the art of manufacturing.

Regarding claims 10-11, the specification notes that, "The steps of hard turning of the surface of the bore and the lateral surface of the blank can be carried out in either order ..." (page 9, line 15-16). Therefore, it would have been obvious to a skilled artisan to perform these steps in either order since it has no effect on the implementation of the invention.

Regarding claim 12, Official Notice is also taken that cubic boron nitride or ceramic cutting coated tools are well known in the machining arts to extend the life of the tool.

Regarding claim 13, as shown in Figure 13 of Kavthekar, the hard turning of the lateral surface can be carried out in a single operation.

Art Unit: 3726

Regarding claim 14, it is inherent from Kavthekar that the end face surfaces of the blank correspond to the end face surfaces of a cylindrical bearing roller.

Prior Art References

3. The prior art references listed on the enclosed PTO-892, but not used in a rejection of the claims, are cited for their teachings of forming a roller bearing.

Response to Arguments

4. Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection to Kavthekar.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

Art Unit: 3726

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


Contact Information

6. Official documents related to the instant application may be submitted to the Technology Center 3700 mail center by facsimile at (703) 305-3579/3580. Should Applicant desire to submit a DRAFT response to the Examiner by facsimile transmission, then Applicant should contact the Examiner at the number below for instructions concerning the transmission of DRAFT documents. Applicant is reminded to clearly mark any facsimile transmission as "DRAFT" if it is not to be considered as an official response.

7. Any inquiry concerning this communication should be directed to Examiner Eric Compton at telephone number (703) 305-0240.

ebc

March 26, 2002


S. THOMAS HUGHES
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700